

**CERTIFICATION OF RCRA CLOSURE  
FOR WEST SPRAY FIELD**

June 19, 1995

Prepared for:

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REVIEWED FOR CLASSIFICATION

CLASSIFICATION EXEMPTION WAIVER/R B HOFFMAN

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## ACRONYMS

CCR	Code of Colorado Regulations
CFR	Code of Federal Regulations
CDPHE	Colorado Department of Health and Environment
CHWA	Colorado Hazardous Waste Act
DOE	Department of Energy
EPA	Environmental Protection Agency
ER	EG&G Environmental Restoration
IHSS	Individual Hazardous Substance Site
ITS	Interceptor Trench System
OU	Operable Unit
PCOC	Potential Chemical of Concern
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFETS	Rocky Flats Environmental Technology Site
RFI/RI	RCRA Facility Investigation/Remedial Investigation
WSF	West Spray Field

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## 1.0 INTRODUCTION

The purpose of this report is to certify the Resource Conservation and Recovery Act (RCRA) closure of Operable Unit (OU) 11, the West Spray Field, at the Rocky Flats Environmental Technology Site (RFETS) *WASTREN, Inc*, as an independent third party, has been retained by the RFETS Environmental Restoration (ER) Program Division to perform this certification. This report provides the data to support the closure determination by the owner/operator and an independent professional engineer as required by 6 CCR 1007-3 265 115. The data required for this closure determination is included in this report or incorporated by reference from OU 11 RCRA Facility Investigation/Remedial Investigation (RFI/RI) documentation. The closure of OU 11 was performed in accordance with applicable Colorado Hazardous Waste Act (CHWA) interim status requirements in 6 CCR 1007-3 Section 265, the RFETS RCRA Part B Permit (CDPHE 1991) and the approved *Final Phase I RFI/RI Work Plan for OU 11* (the Work Plan)(DOE 1992) or in *Technical Memorandum, Revised Field Sampling Plan and Data Quality Objectives OU11*, (Technical Memorandum)(DOE 1994), and Document Modification Requests 94-DMR-ERM-0067, 94-DMR-ERM-0078, 94-DMR-ERM-0080, 94-DMR-ERM-0081, 94-DMR-ERM-0082.

### 1.1 PROJECT DESCRIPTION

The West Spray Field, OU 11, was identified as a hazardous waste management unit regulated by RCRA in 1986 because it was known to have received water containing hazardous constituents from the Solar Evaporation Ponds. The water from the ponds was pumped to the West Spray Field using irrigation piping and sprayed primarily over three areas. The RFI/RI Work Plan serves as the State and the Environmental Protection Agency (EPA) approved RCRA closure plan for the Operable Unit.

The geology and hydrogeology for the West Spray Field is presented in detail in Section 2.0 of the *Operable Unit 11 Combined Phases RFI/RI Report for the Rocky Flats Environmental Technology site* (the Final Report)(DOE 1995a) and will not be repeated in this *Certification of RCRA Closure for OU 11*.

### 1.2 HISTORICAL OVERVIEW

The following historical overview is a summation of the information provided in the Work Plan (DOE 1992). The West Spray Field is described in detail in the Final Report (DOE 1995a).

There is one Individual Hazardous Substance Site (IHSS) in OU 11, IHSS 168. The OU 11 and IHSS 168 boundaries coincide and encompass the entire West Spray Field. The West Spray Field is an area of approximately 105 acres. It consists of undeveloped acreage on the west side of Rocky Flats, adjacent to the T-130 complex.

The West Spray Field was operated from April 1982 to October 1985. During operation excess liquids from the Solar Evaporation Ponds 207-B North and 207-B Center were pumped periodically to the West Spray Field for spray application. Pond 207-B North received water from an interceptor system installed to collect ground water seepage from the hillside north of the Solar Evaporation Ponds. Pond 207-B received treated sanitary effluent.

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Spray application was conducted using irrigation equipment in three areas within the boundaries of the waste management area. Spray application was initially performed using two moving spray irrigation lines mounted on metal wheels with stationary impulse heads in Area 1. These portable lines were replaced by the two western most fixed lines in Area 1 and, in 1985, by a third fixed irrigation line. These lines were fitted with stationary impulse heads. Area 2 was the location of a single fixed irrigation line. A spray impulse cannon was placed in various locations of Area 3 after use of the portable irrigation system was discontinued.

The West Spray Field was used when excess liquids accumulated in Ponds 207-B North or 207-B Center. When storage capacity of one of the ponds was reached, the liquids were pumped to the spray field for land application. These ponds originally contained process waste water. All process wastes were removed in the B-series Solar Evaporation Ponds 207-B North, Center, and South in the late 1970s, as detailed in the *Closure Plan Solar Evaporation Ponds* (Rockwell 1988). Since that time, the B-series Solar Evaporation Ponds have held treated effluent water from the plant waste water treatment system and ground water intercepted from an area north of the Solar Evaporation Ponds. The 207-B North and Center ponds receive liquid on a relatively constant basis due to the constant generation of treated sanitary waste water which is still placed in 207-B Center, and relatively constant generation of ground water collected north of the ponds which continues to be placed in 207-B North. The ground water is still collected because of elevated nitrates and the resultant need to prevent off-site migration of this ground water. Contaminants which have leached from the ponds when they were used for process waste water, later collected in the interceptor trench, and redeposited in the ponds, could have been applied to the West Spray Field.

### 1.3 WASTE CHARACTERIZATION

Approximately 66,000,000 gallons of waste water were applied at the West Spray Field during its operation. Of this quantity, approximately 9,000,000 gallons were taken from 207-B North, and 57,000,000 gallons were taken from 207-B Center.

The contents of 207-B North during operation of the West Spray Field generally consisted of ground water collected in the trench interceptors and french drain system located in the hillside north of the Solar Evaporation Ponds. The Interceptor Trench System (ITS) collected ground water and has historically prevented seepage and ground water recharge near the Solar Evaporation Ponds from entering North Walnut Creek. The liquid is piped to Pond 207-B North from the low point of the ITS (the interceptor trench pump house). Because the ITS collects ground water downgradient of the Solar Evaporation Ponds, the recovered ground water could possibly contain constituents which may have migrated from any of the ponds.

The liquid contained in Pond 207-B Center generally consists of effluent from the Rocky Flats sanitary sewage treatment plant. However, some seepage contents from Pond 207-B North collected in the ITS have also been placed in Pond 207-B Center.

Sampling efforts of pond water from 1984 through 1988 suggest that the ponds contained slightly elevated concentrations of metals. The samples also exhibited elevated levels of nitrates, gross alpha, and gross beta.

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## 2.0 RCRA FACILITY INVESTIGATION

In addition to the review of the historical information presented in Sections 1 and 2 of the Work Plan, a sampling and analysis program was conducted to support OU 11 closure. A detailed description of the methods and results of the closure activities can be found in the Work Plan (DOE 1992), in the revisions to the Work Plan as contained in the Technical Memorandum (DOE 1994), and the Final Report (DOE 1995a).

The above activities were performed to meet the closure performance standards required by the RFETS RCRA Part B Permit (DOE 1991) issued October 30, 1991. RCRA Subpart G, Part 265.111(b), and the Code of Colorado Regulations (6 CCR 1007-3 265.111(b)) require a closure performance standard that "controls, minimizes, or eliminates [contamination] to the extent necessary to protect human health and the environment."

The results of the sampling and analysis efforts were used to determine the nature and extent of contamination at the West Spray Field and to perform a screening process to determine if the Human Health Risk assessment was necessary. This procedure was described in the Colorado Department of Health and Environment's *Conservative Risk Screen for Sources at the Rocky Flats Plant*, and during a presentation attended by the State, the EPA, DOE, and DOE's contractors. Essentially, the site analytical data were evaluated using an agreed-upon protocol (the Gilbert methodology) to identify Potential Chemicals of Concern (PCOCs). The PCOCs were then screened against chemical-specific Risk Based Concentrations to determine if the site had the potential to affect human health or the environment. The result of the screening process demonstrated that the site poses no threat to human health or the environment and that no further investigation or remediation actions are necessary.

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### 3.0 RCRA CLOSURE CERTIFICATION ACTIVITIES

The following activities were performed by WASTREN personnel to certify the OU 11 closure criteria as defined in the Final Report

WASTREN, Inc , reviewed *Operable Unit 11 Combined Phases RFI/RI Report for the Rocky Flats Environmental Technology Site, Final Report*, June 8, 1995, against the following references

- *Environmental Restoration Final Phase I RFI/RI Work Plan For OU 11 (West Spray Field)*, 21100-WP-OU 11 10, September 14, 1992 (DOE 1992)
- *Technical Memorandum Revised Field Sampling Plan and Data Quality Objectives OU11*, RFP/ERM-94-00030, June 1994 (DOE 1994), and Document Modification Requests 94-DMR-ERM-0067, 94-DMR-ERM-0078, 94-DMR-ERM-0080, 94-DMR-ERM-0081, 94-DMR-ERM-0082
- *Statistical Comparisons of Site-to-Background Data in Support of RFI/RI Investigations*, Rocky Flats Plant Guidance Document Revision 0, Draft B (EG&G 1994)
- Letter to Mr Schassburger, DOE, from Martin Hestmark, EPA This letter contains the EPA's acceptance of the "Gilbert methodology " (Gilbert 1993)
- *Programmatic Risk-Based Preliminary Remediation Goals*, DOE RFETS, Final, Revision 2, February 1995 (DOE 1995b)
- Letter to Mr Duprey of the EPA from the Colorado Department of Health, March 30, 1994 This letter provides documentation that the State has accepted the Conservative Risk Screen and the "Gilbert Methodology " (CDPHE 1994)

In addition, a limited amount of the original laboratory data were reviewed All analytical data collected during the field investigation are maintained by the Rocky Flats Environmental Database System (RFEDS) Data is maintained in an electronic format and as hard copy files A number of hard copy files were reviewed to determine if the data are complete, accessible, and validated Hard copy results for three surface soil metals samples and seven borehole semivolatile samples were reviewed All data were found to be complete, stored in the RFEDS file room, and contained validation reports

The above references were used to determine if the Conservative Screen was performed accordingly The Conservative Screen is not discussed in the Work Plan, however, the use of the Conservative Screen to demonstrate closure of the site was agreed to by both the State of Colorado and the EPA (CDPHE 1994)

#### 4.0 CONCLUSIONS AND CLOSURE CERTIFICATION

The information in the Technical Memorandum and the Final Report provide the information required for RCRA closure of OU 11. Review of the Conservative Screen process by *WASTREN, Inc* supports the RCRA closure information developed in the Final Report.

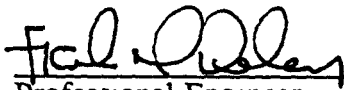
The Final Report states.

*As a result of recent agreements among DOE, EPA, CDPHE, ecological risk at RFETS is assessed on the watershed scale rather than performing ERAs for each OU. This strategy ensures that ecological risks are being evaluated on an ecologically relevant scale. The major components of this process have been verbally approved by EPA and CDPHE and written approval is pending. Under this scheme, ecological risks from OU 11 sources will be considered for their contributions to the ERAs in the Woman Creek and Walnut Creek watersheds. However, to facilitate early closure of OU 11, a screening-level risk assessment is documented here in advance of the watershed ERAs.*

Section 7.7 of the Work Plan states that air monitoring will be performed during sampling operations. Section 2.2 of the Final Report states that air monitoring was not performed because "(1) spray activities at the WSF were ceased in 1985, (2) vegetation covers spray areas, and (3) current activities do not involve resuspension of soils."

Based on this information and the exceptions noted above, the RCRA closure performance standards for OU 11 have been met.

The undersigned hereby certify that closure of the previously described IHSS within Operable Unit 11 at the Rocky Flats Environmental Technology Site was performed in accordance with the specifications of the approved closure plan entitled *Final Phase I RFI/RI Work Plan for OU 11 (West Spray Field)*, dated September 14, 1992 (DOE 1992), and *Technical Memorandum, Revised Field Sampling Plan and Data Quality Objectives OU 11* (DOE 1994).

  
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JUNE 19, 1995  
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JUNE 19, 1995  
Date



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## 5.0 SELECT REFERENCES

Code of Colorado Regulations, Section 6, Part 265.

Code of Federal Regulations, Title 40, Part 265

CDPHE. 1994 Letter to Mr Duprey of the EPA from the Colorado Department of Health. March 30, 1994 *Resolution of Data Aggregation/Baseline Risk Assessment Dispute at the Rocky Flats Plant*

\_\_\_\_ 1991. Colorado Department of Public Health and Environment, *Rocky Flats Plant RCRA Permit*, ID No CO7890010526, Permit No 91-09-30-01, October 30, 1991

DOE 1995a. *Operable Unit 11 Combined Phases RFI/RI report for the Rocky Flats Environmental Technology Site, Final Report* June 8

\_\_\_\_ 1995b *Programmatic Risk-Based Preliminary Remediation Goals*. Final, Revision 2. February

\_\_\_\_ 1994. *Technical Memorandum revised Field Sampling Plan and Data Quality Objectives OU11*, RFP/ERM-94-00030, June 1994 and Document Modification Requests 94-DMR-ERM-0067, 94-DMR-ERM-0078, 94-DMR-ERM-0080, 94-DMR-ERM-0081, 94-DMR-ERM-0082

\_\_\_\_ 1992 *Environmental Restoration Final Phase I RFI/RI Work Plan For OU 11 (West Spray Field)* 21100-WP-OU 11 10 September 14

\_\_\_\_ 1991 United States Department of Energy, *Federal Facility Agreement and Consent Order (Interagency Agreement [IAG] DOE, EPA, and CDH)*, Washington, D C , January 22, 1991

EG&G 1994 *Statistical Comparisons of Site-to-Background Data in Support of RFI/RI Investigations* Rocky Flats Plant Guidance Document, Revision 0, Draft B

EPA. 1993 Letter from Martin Hestmark of EPA to Richard Schassburger of U.S DOE. October 25, 1993 *Statistical Comparison of Remedial Investigation Data and Background Data at Rocky Flats*

Rockwell International 1988 *Closure Plan Solar Evaporation Ponds* Volumes I through IV

Gilbert, R O 1993 Letter to Beverly Ramsy, Systematic Management Services, Inc July 30  
This letter details the "Gilbert Methodology "